ASSIGNMENT 3

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1. Introduction

The objective of this activity is to design a cost-efficient online learning platform which replaces the traditional education approach where the controls such as course offering, professor assignment, student enrollment are handled by the university. The proposed model is a decentralized education model where the professor is at the center of the educational model with full autonomy. The professor can choose the courses he wishes to offer as per his specialty. The students in this model have the flexibility to sign up to the courses and select the classes of professors as they please. The learning platform also offers the option for students to get certified/degree from several third-party authorizers after completing the course requirements. The platform also performs analysis on varied factors and entities involved in the model to determine the success of the platform.

2. Proposed Solution

There are several factors that would be considered for the Professor as a Service model Solution. The major factors that play a role in academic journey of a student are the cost of education, best available professor, and best courses. The solution would ensure that students get access to the best courses and professors at lowest cost from the comforts of his home from any location in the world. It would ensure that various professors could offer courses online and get direct payment from students and pay subscription fees for using the online platform. Apart from giving state of art education, our model will allow students to provide feedback (rating + comment) for the professors. Feedback will be anonymous and available to professors and students, so that professors can improve their performance and students can refer feedback to select the course and professor. There would be a third-party authority to verify the degree of students taking courses. The success rate of the platform would be determined by the 1) high ratings of professors, 2) number of courses taken by students and 3) students finally earning a degree after studying from multiple professors online. A dashboard would be designed to monitor professor's ratings and students passing and failing rate. It would help them analyze the results of all the data points and when the result is not as per their expectations, relevant improvements can be made to the system.

3. Professor as Service Model VS Traditional Model

Professor as a service model has the obvious advantage of flexibility. Having the ability to work, have a household, and take classes at the same time is very convenient. While online students have deadlines, they have more flexibility in how they spend their time - they can choose what time they study, complete assignments, and listen to lectures. With a traditional model, there is often a lack of flexibility. One needs to attend classes in person at the scheduled times, and there is a commute restriction that follows.

Professor as a service model gives students more independence and control over their education. Students on an online digital platform are held accountable for their assignments and other deadlines. Students have complete independence to choose whatever course under whichever professor they wish irrespective of their time zone or location of the professor. Students can choose if they want to earn a degree after the end of the course and choose the listed third party as per their preference. The online platform will have multiple third parties who are associated with multiple reputed employers.

Professor as a service model is completely decentralized. Professor has full autonomy to add any course and update price for that course on demand and supply basis. Professor must pay some subscription fee for utilizing the platform. In traditional approach, the university needs to manage the professor assignment for specific course, course schedule, professor payment, etc.

Professor as a service model aims for providing quality of education to students by taking feedbacks from students after course end to calculate professor rating. The rating enables students to choose courses under different professors.

4. Entities

The entities involved in providing the quality of education are as follows:

- Person: Person entity contains details of all the users involved in the model like personId, person Name and password.
- **Professor:** Professor entity contains all the information about the professor like Professor Id, professor name, courses they plan to offer.
- **Student:** Student entity contains all the information about the student like id, student name,
- **Course:** Course entity stores all the information related to the course such as the course id, name, credits for the course and the price student must pay to enroll the course.
- **CourseCatalog:** It consists of all the information about the courses offered by various professors.
- **EnrollmentRecord:** Enrollment record contains information about the courses and the professor they have enrolled for and whether they have opted to pursue a degree for that course.
- **Enrollment Directory:** It contains information about the enrollment history of every student and
- **Feedback:** Feedback entity contains ratings provided by the student about the professor's class they enrolled in.
- **FeedbackManager:** It contains a list of feedback provided by students for a particular class.
- **GradeRecord:** Grade entity contains information about the grade the student secured for a particular course.
- **StudentGradeManager:** It contains information about the grade secured by students for courses.
- **Subscription:** It contains information about the subscription taken by the professor, next due date, and payment date.
- **SubscriptionRecordManager:** It contains a list of subscription details taken by the professor
- **Performance Report:** This is used to store data such as degrees earned by students, student grades, student enrollment and professor enrollment to the platform, etc. which will help to generate reports to determine the success of the learning platform.
- **Payment:** Payment entity contains information like payment id, amount, and the payee.
- **Payment Manager:** It contains a list of payment details.
- **Third Party**: It contains information like third party name, third party id, and the course details along with grades secured by the student for providing digital certification.
- **Third Party Catalog**: It contains a list of all the third parties for digital certification and a list of employees they are affiliated with

5. UML Diagram

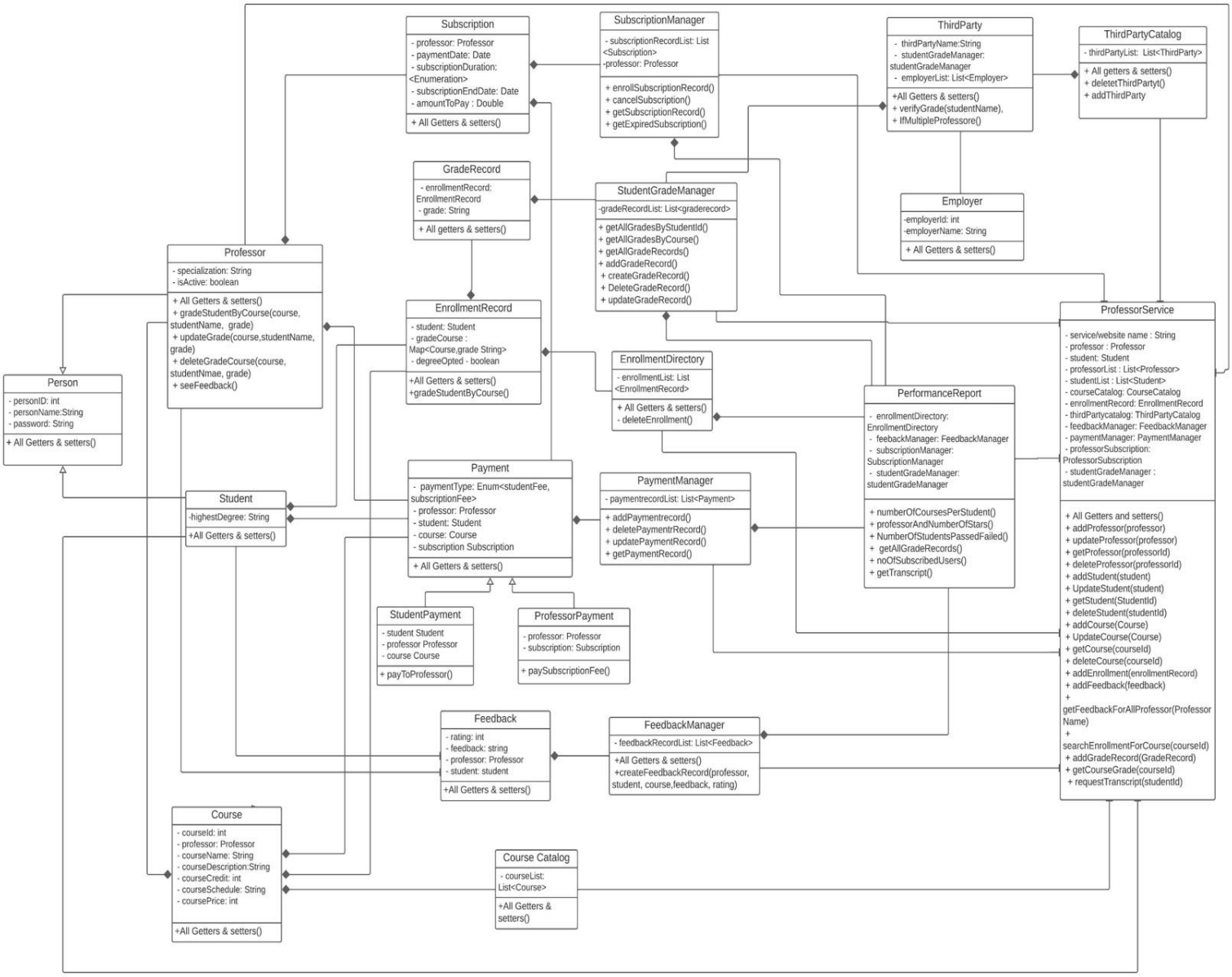


Figure 1: Class Diagram.

6. Sequence Diagram

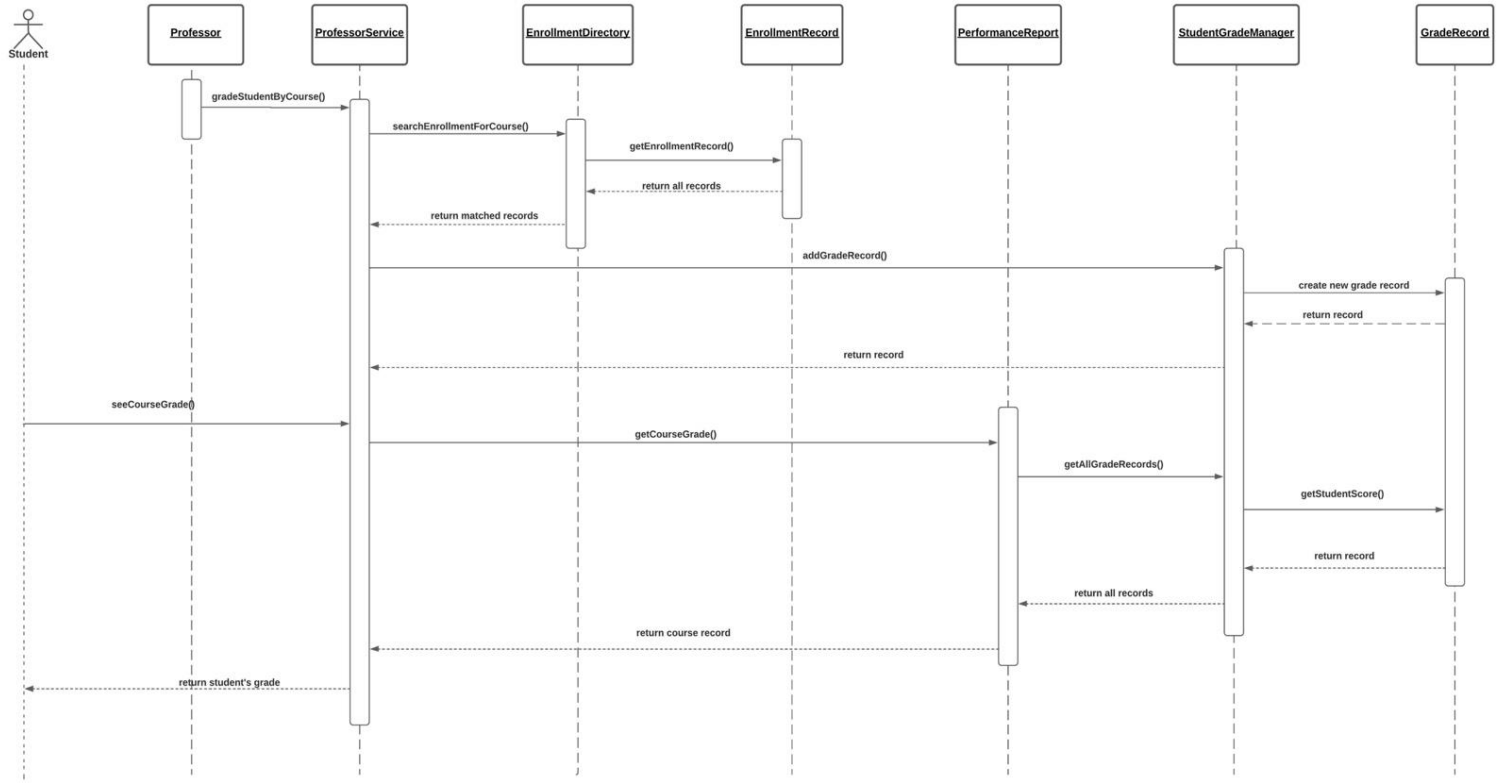


Figure 2: Sequence Diagram of Performance (Student grade).

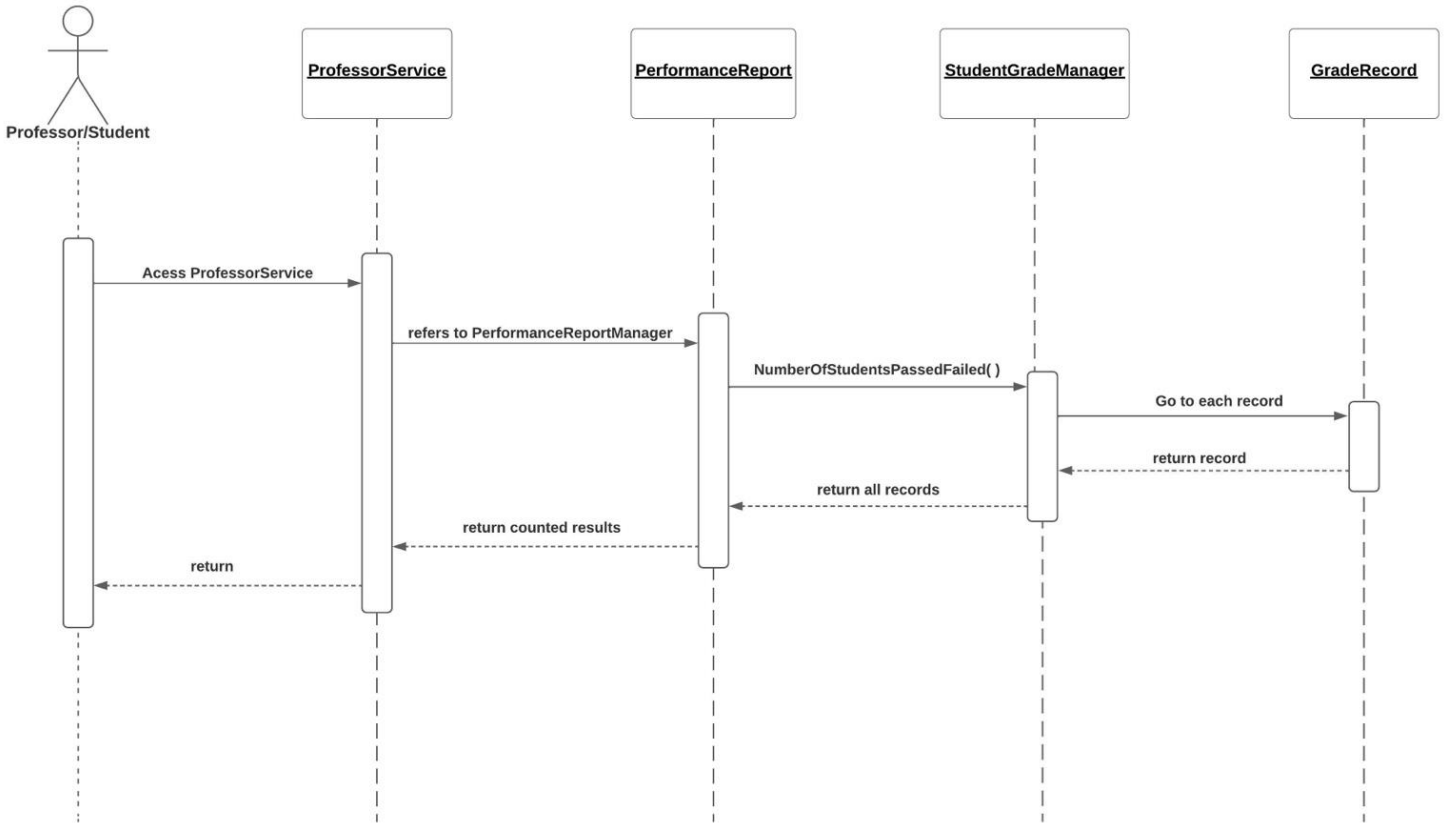


Figure 3: Sequence Diagram of Performance (number of students passed and failed).

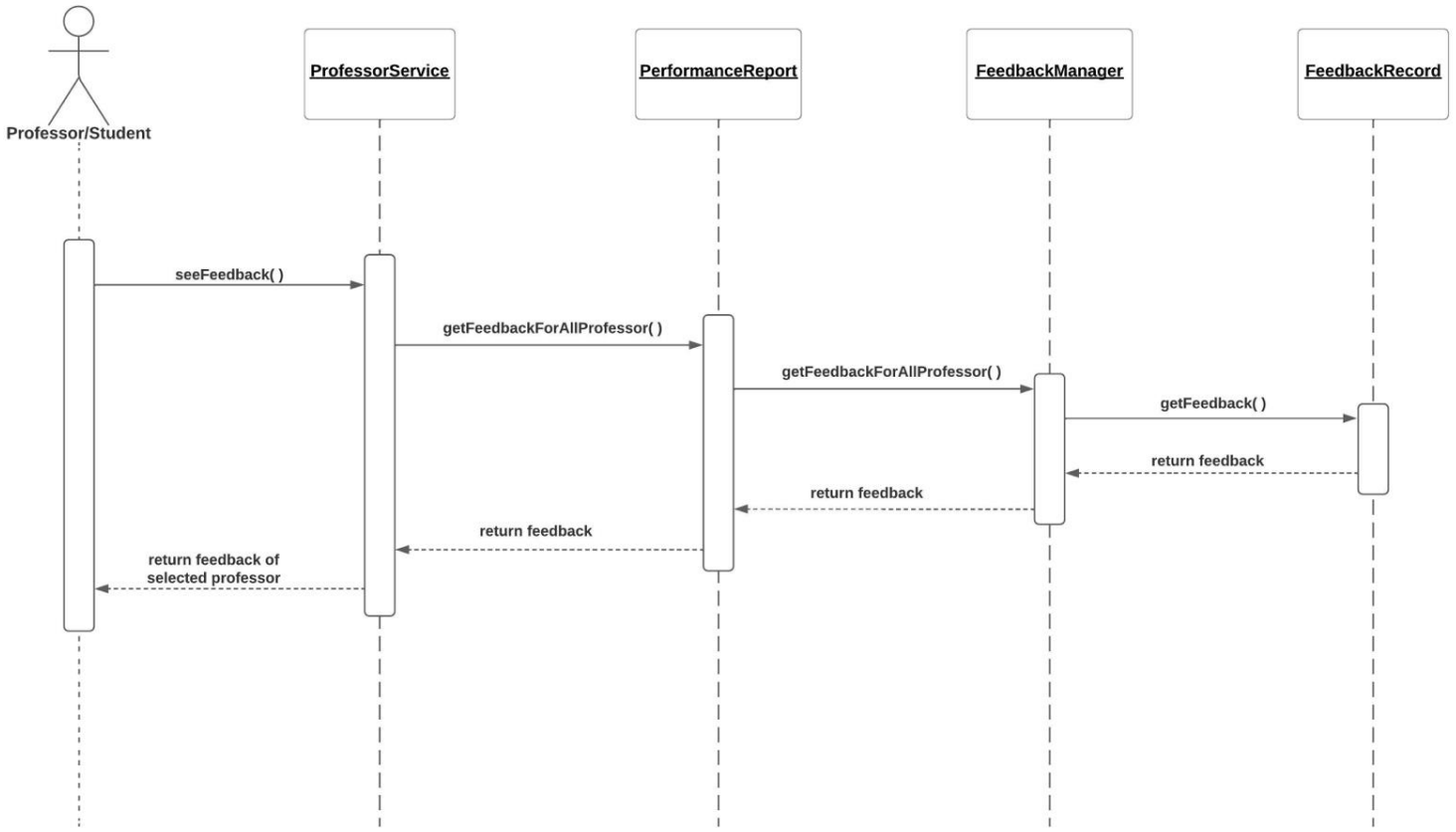


Figure 4: Sequence Diagram of Feedback.

7. Screen Designs

The solution will provide a Dashboard that can be accessed via a Logging Page:

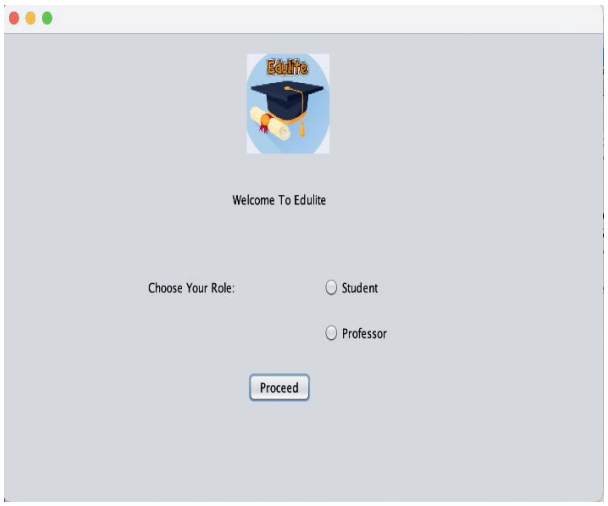


Figure 5: Landing Page To Application

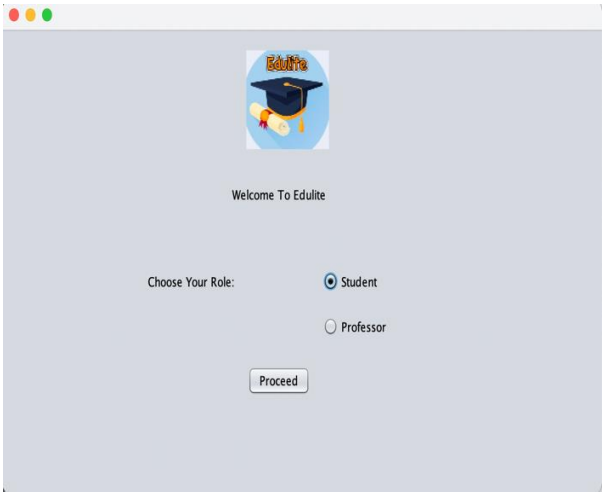


Figure 6: Landing Page To Application to Choose Role

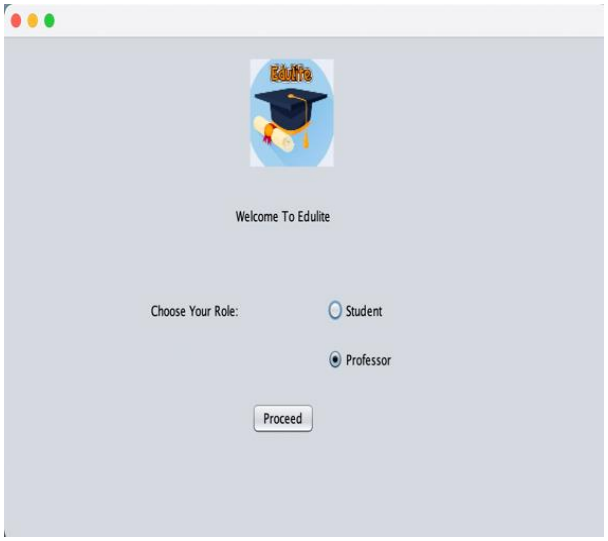


Figure 7: Landing Page to Select Professor Role

Figure 8: Login/SignUp for Professor

Figure 9: Log In For Professor

Figure 10: Sign Up For Professor

Figure 11: Log In For Student

Figure12: Sign Up For Student

Figure 13: Search Course or Professor by Student

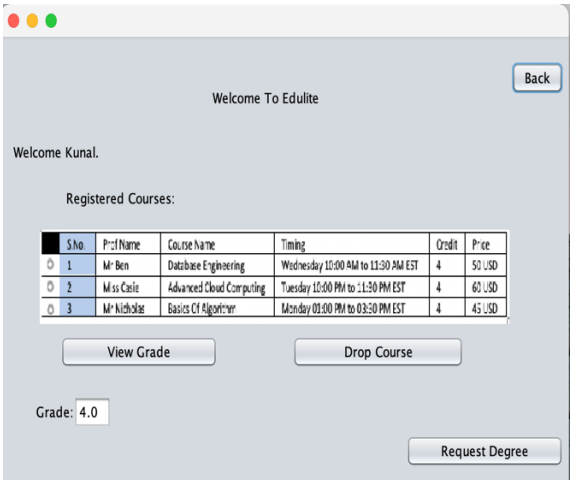


Figure 14: Registered Curses For Students

Figure 15: Options For Professor

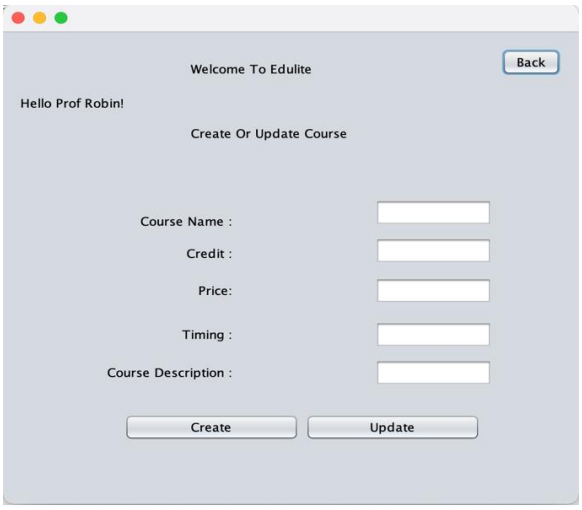


Figure 16: Create Or Update Course For Professor

Figure 17: Courses Provided *By Professor*

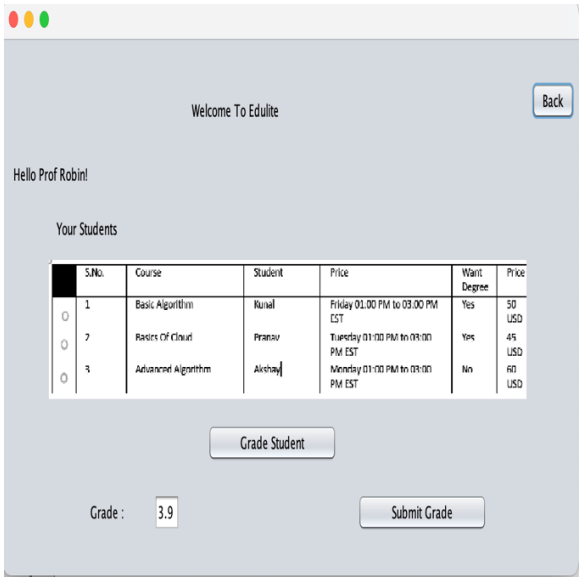
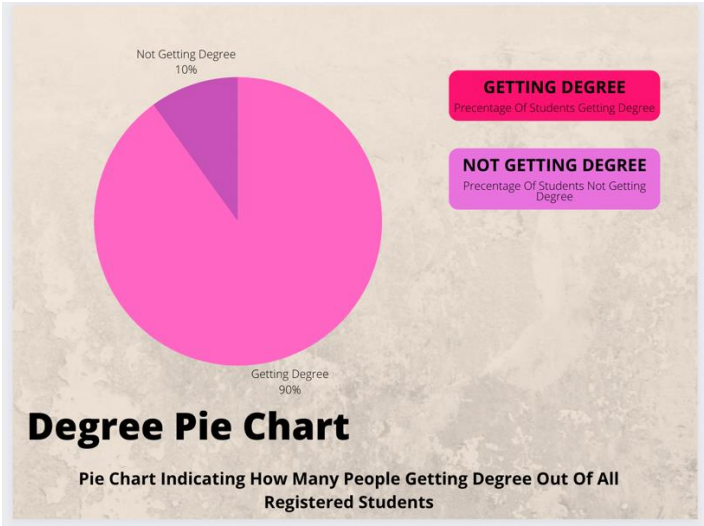
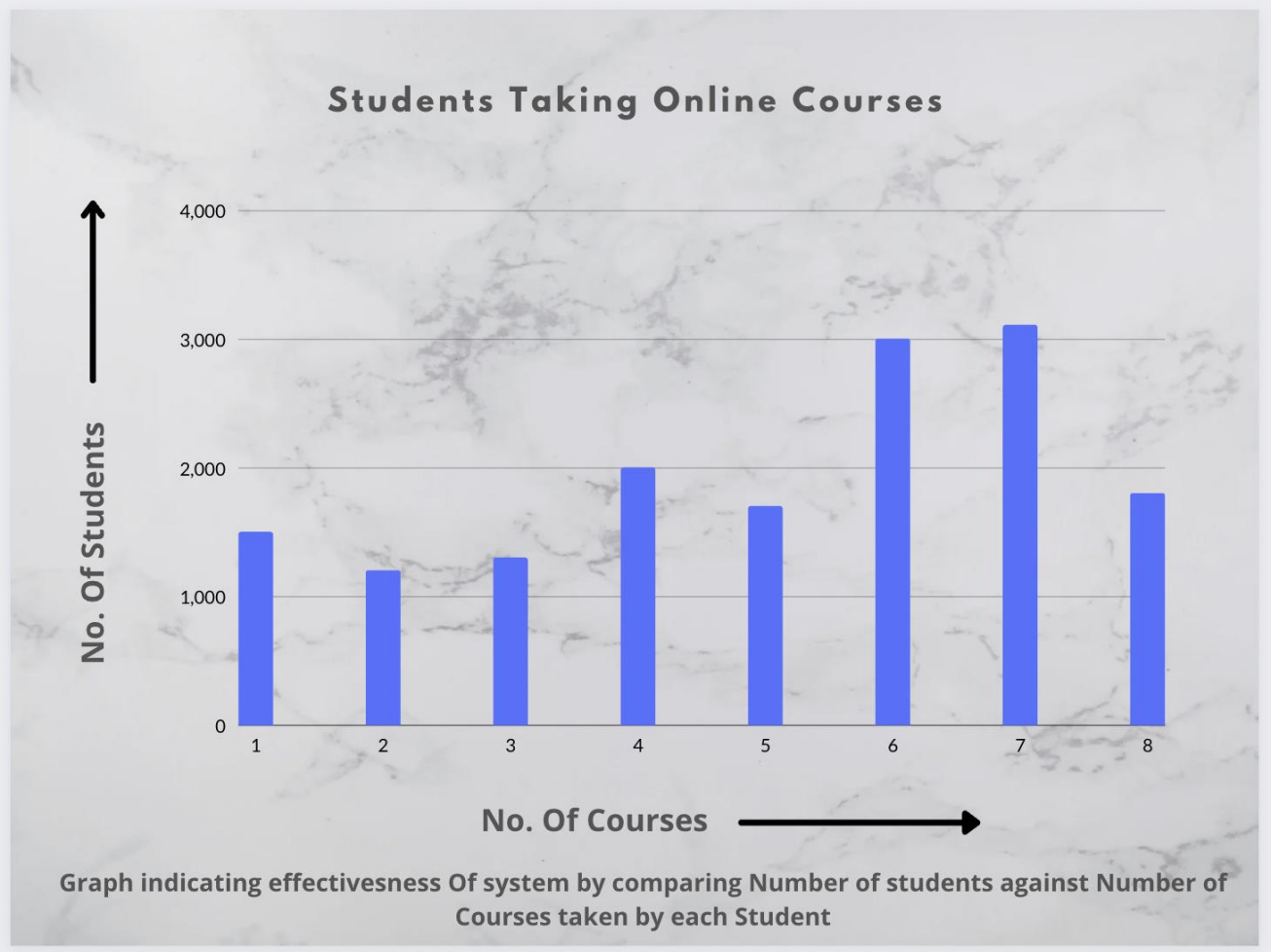


Figure 18: Students For Signed Up For Professor



Total No. Of Students	15610
Degree	14049
Not Getting Degree	1561

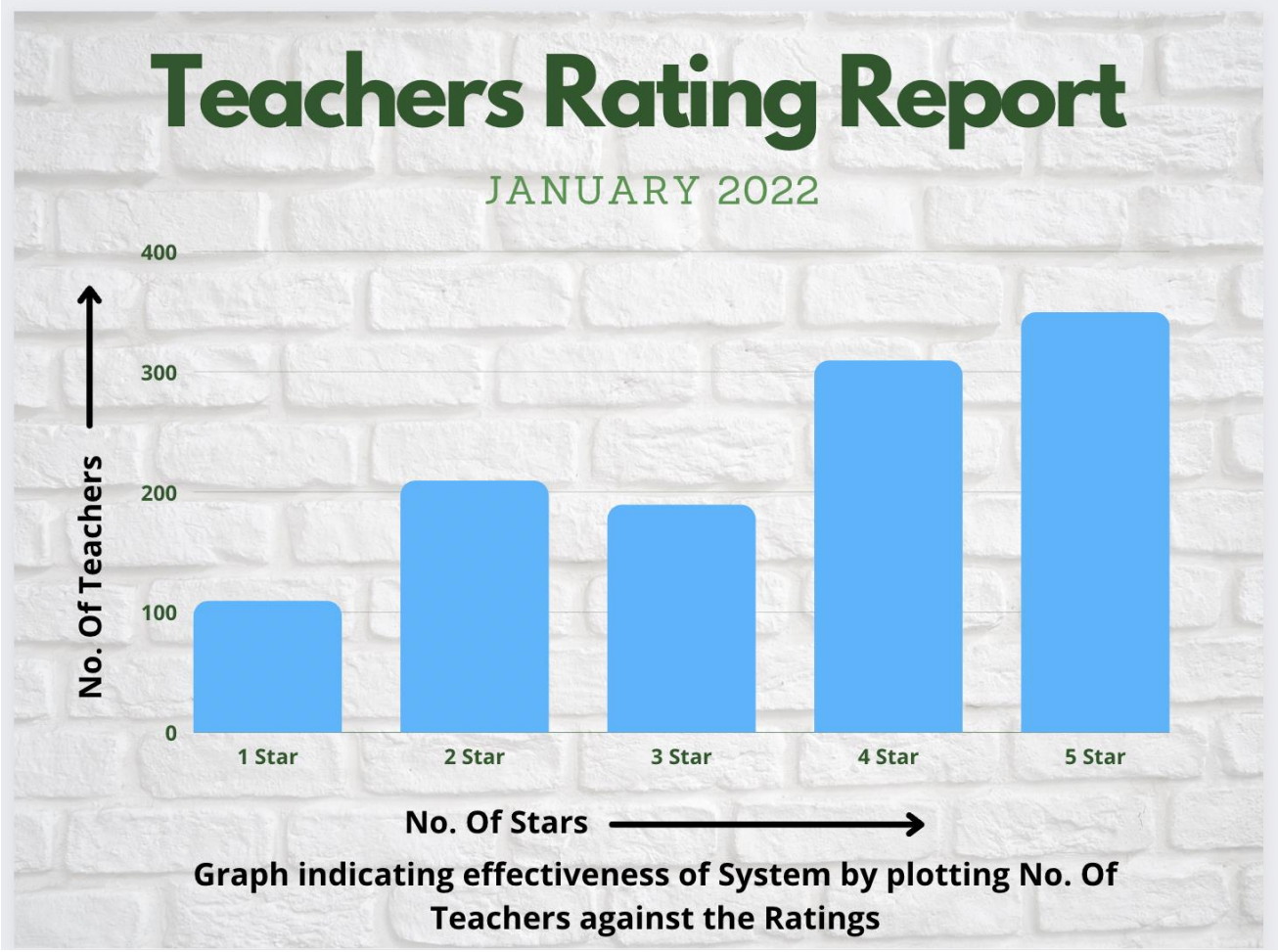
Figure 19: Pie Chart And Related Data Showing Percent Of Students Getting Degree If They Are Enrolling



Graph indicating effectivesness Of system by comparing Number of students against Number of Courses taken by each Student

S. No.	No. Of Students	No. Of Courses Offered
1	One	1200
2	Two	1500
3	Three	1300
4	Four	2000
5	Five	1700
6	Six	3001
7	Seven	3109
8	Eight	1800

Figure20: Chart And Related Data Showing Number Of Courses Enrolled in by Each Student



S. No.	No. Of Stars	No. Of Teachers
1	**One**	**109**
2	**Two**	**209**
3	**Three**	**189**
4	**Four**	**309**
5	**Five**	**349**

Figure21: Chart And Related Data Showing Rating Of No of Professors

8. Overall Assessment

Replacing the Professor as a Service Model with traditional University Model will save us a lot of time and cost. The time and money that was otherwise spent in building and maintaining the university infrastructure, management of student enrollment, professor assessment and course allocation, and other university activities can be saved. The money spent on books, notebooks, uniforms can be saved, as most of the assignments and examinations would all be conducted digitally. The same money can be used to fund the less privileged students to get the necessary education located anywhere and at any time. The Professor as a Service Model will include a scholarship section where the course fee could be waived if the student is able to provide evidence that he is unable to sponsor the course. After proper verification, the student could get free access to course under the professor they chose.

The proposed online platform is inclusive and aims to provide quality of education to students from all backgrounds located anywhere and anytime in the world.

9. References

1. https://www.youtube.com/watch?v=UI6lqHOVHic
2. https://www.youtube.com/watch?v=pCK6prSq8aw
3. LinkedIn Learning: Learning Management Systems